

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1, 3 and 21-39 are pending in the present application. Claims 1, 3, 21 and 22 are amended and Claims 23-39 are added by the present amendment. Claims 2 and 4-20 were previously canceled.

Amendments to the claims find support in the originally filed specification at least at page 26, line 16 to page 28, line 14.

In the outstanding Office Action, the drawings were objected to; Claims 1 and 21 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,427,012 to Petrovic; and Claims 3 and 22 were rejected under 35 U.S.C. § 103(a) as unpatentable over Petrovic in view of U.S. Patent No. 6,185,312 to Nakamura et al. (herein "Nakamura").

Regarding the objection to the drawings, the specification is amended to include the reference descriptions noted in the outstanding Office Action. Accordingly, Applicants respectfully request the objection to the drawings be withdrawn.

Applicants respectfully traverse the rejection of Claims 1 and 21 under 35 U.S.C. § 102(e) as anticipated by Petrovic.

Amended Claim 1 is directed to a digital watermark embedding method including, *inter alia*, controlling at least a phase of a specific frequency component signal of an input image in accordance with watermark information, and outputting an image signal embedded with the watermark information by superposing the phase-controlled specific frequency component signal on the input image signal. Amended Claim 21 and new Claims 24, 28, 32, 36 and 39 include similar features.

In a non-limiting example, Figure 10 shows signals according to a digital watermark embedding method. In this example, at least the phase of an image signal (a) is controlled

(e.g., shifted) in accordance with watermark information to produce phase-controlled (e.g., phase-shifted) signals (c, d). The phase-controlled (phase-shifted) specific frequency component signals (c, d) are superposed on the image signal (a) to produce an image signal (e) embedded with the watermark information.

Applicants respectfully submit that Petrovic does not teach or suggest the claimed features. Petrovic describes an embeddor wherein an embedded signal generator generates a replica from a cover signal according to a stego key, modulates or modifies the replica with an auxiliary signal, scales the result using a gain parameter, and generates an embedded signal.<sup>1</sup> However, Petrovic does not describe controlling (shifting) the phase of an image signal in accordance with watermark information and superposing the phase-controlled (phase-shifted) specific frequency component signal on the image signal to produce an image signal embedded with the watermark information. In other words, Petrovic does not indicate controlling (shifting) the phase of the specific frequency component signal of the image signal and producing a watermark embedding image signal using the phase-controlled (shifted) signal. Thus, Applicants respectfully submit that Petrovic does not teach or suggest

controlling at least the phase of the specific frequency component signal in accordance with the watermark information to produce at least one phase-controlled specific frequency component signal;  
outputting an image signal embedded with the watermark information by superposing the phase-controlled specific frequency component signal on the input image signal

as recited in amended Claim 1, and as similarly recited in amended Claim 21 and new Claims 24, 28, 32, 36 and 39.

Accordingly, Applicants submit that independent Claims 1, 21, 24, 28, 32, 36 and 39, and claims depending therefrom, are allowable.

Applicants respectfully traverse the rejection of Claims 3 and 22 under 35 U.S.C. § 103(a) as unpatentable over Petrovic in view of Nakamura. Claims 3 and 22 depend from

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<sup>1</sup> Petrovic at Appendix.

Claims 1 and 21, respectively, which as discussed above are believed to be allowable.

Further, Nakamura describes a method for embedding watermark information by using a random sequence, but does not teach or suggest the claimed features that are missing from the disclosure of Petrovic.

Accordingly, Applicants respectfully request the rejection of Claims 2 and 22 under 35 U.S.C. § 103(a) be withdrawn.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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